



*ENOVIA PDM: Industry proven
Product Data Management solutions*





Higher quality in less time

More product complexity. More demanding customers. Fiercer competition. A more complex global business environment. These are just some of the pressures faced by today's manufacturers. ENOVIAAPM reduces these pressures by helping you manage product and process complexity, improve product quality, integrate your supply chain, and deliver products faster. ENOVIAAPM, a proven Product Data Management (PDM) solution developed by the ENOVIA Corporation and marketed by IBM, is helping manufacturers in the aerospace, automotive, consumer electronics and other industries deliver higher quality products - in less time.

It's time for change

Wouldn't it be nice if all product designs worked the first time - every time? Unfortunately, even the best designs sometimes must change due to unforeseen manufacturing factors. ENOVIA^{PM} replaces the error-prone, paper-based process some companies use for communicating a product change request to engineering with an electronic one. ENOVIA^{PM} digitally captures the reasons for the change, increasing corporate design knowledge. Electronic audit trails of all product changes help ensure compliance with standards such as ISO-9000. E-mail notifications of pending changes minimize communication delays. By managing the entire engineering change process, ENOVIA^{PM} helps to ensure that the proper changes are made to the right product design - while saving money and drastically reducing development cycle times.

Sharing the knowledge

Processes for managing and releasing complex product designs are often as complex as the product itself. Dependencies among multiple product components must be traced and validated. An impact of a change to a component must be understood by every design location that uses that component. Signoffs by involved engineering disciplines must be captured and tracked for audit purposes.

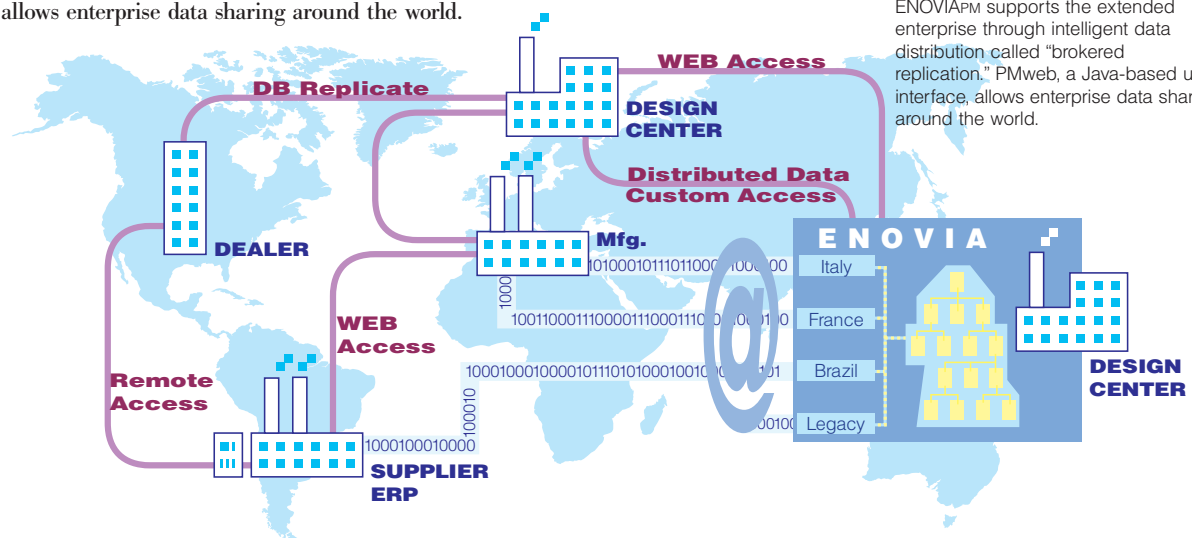
ENOVIA^{PM} controls the entire product information release process throughout the enterprise. Because the product definition is captured with ENOVIA^{PM}, product dependencies are easily traced and managed. Ensuring that the right components are released at the right time to the right manufacturing facility reduces errors during manufacturing. Correcting such errors is typically very expensive. ENOVIA^{PM} reduces the time to release a product by electronically prompting for signoff and automatically capturing and tracking design approvals. A release process managed by ENOVIA^{PM} helps you deliver product knowledge more effectively to the rest of your organization.

ENOVIA^{PM} supports the extended enterprise through intelligent data distribution called "brokered replication." This distribution process ensures that information is packaged efficiently and distributed not only to other ENOVIA^{PM} users, but to other legacy applications such as existing PDM systems and ERP systems. PMweb, a Java-based user interface, allows enterprise data sharing around the world.



"Developing a brand new Chrysler vehicle is a complicated process. It involves hundreds of designers, engineers and other people, both locally and around the globe, working on thousands of parts. The ENOVIA products help us better manage the product development process, which is really a massive communications challenge."

*Ron Bienkowski,
Chief Engineer
Technical Computer Center
DaimlerChrysler*



COMPLEMENTARY SOFTWARE



BAPI CERTIFIED

ENOVIA^{PM} can be integrated with ERP systems such as SAP and Baan to provide tight engineering change and distribution control of product data across multiple manufacturing sites. This is done using a powerful bi-directional synchronization mechanism. Operating in this way, item data, BOMs, documents and vendor information in ERP systems can be modified from ENOVIA^{PM}, and selected product planning and plant floor information can be fed back to ENOVIA^{PM}. This integration ensures your data is always up-to-date: system-to-system, plant-to-plant and enterprise wide.

Supporting the enterprise

ENOVIA^{PM} builds upon the release process to distribute information to the extended enterprise and to downstream applications, such as ERP. Using its unique “brokered replication” technology, ENOVIA^{PM} ensures that only required information is actually sent. Because ENOVIA^{PM} tracks exactly what information has already been sent, it only needs to send updates, drastically reducing network traffic. This technology can help automate the process of transferring a product line between design or manufacturing locations, as well as validating where a given part is used throughout the extended enterprise. ENOVIA^{PM} also packages information in specific formats expected by a variety of popular ERP systems, including systems from SAP and Baan. ENOVIA^{PM}'s data distribution capabilities, in concert with its ability to manage multiple design centers, allow enterprise processes to span multiple companies and geographies.

ENOVIA^{PM} - An integral element of PDM II

Product Development Management II (PDM II) is a superset of technologies designed to enable manufacturers to reduce product development time, and thus, time to market. By facilitating innovation, PDM II helps companies increase their share in existing markets, and to expand into new markets. ENOVIA^{PM} supports the product data management component of PDM II, and is complemented by ENOVIA^{VPM}, which helps companies manage product information during the conceptual design phase.

Support for the casual user and the extended enterprise

ENOVIA^{PM} extends its PDM capabilities to the entire extended enterprise through its web-based user interface, PMweb. This product gives users who do not need the full functionality of the ENOVIA^{PM} native client the ability to access and create documents and to execute product development workflows using a Java-enabled web browser. Consisting of a web server and a client application written using the Java programming language, PMweb provides access to enterprise information through the corporate intranet and extends the corporation by allowing access by its suppliers and customers.

Managing complexity

Faced by increasing demands by consumers for mass customization, today's manufacturers are forced to deliver increasingly complex products. At the same time, more of the design and manufacture of key components are being outsourced to suppliers. In fact, top tier suppliers are being asked to deliver complete assemblies, many of which are as complex as some finished products. By extending beyond physical company boundaries into the extended enterprise, ENOVIA PM manages the entire product development and manufacturing process. Modeling complete product configurations, ENOVIA PM helps to manage the complexity of today's products. ENOVIA PM's robust configuration management capabilities allow engineers to specify when product version changes should become effective on the manufacturing floor - on a specific date, or at a particular product unit number - even across multiple manufacturing locations. ENOVIA PM also allows for the combination of these capabilities for modeling really complex scenarios that can occur, for example, within the aerospace industry.

Rules-based configurations

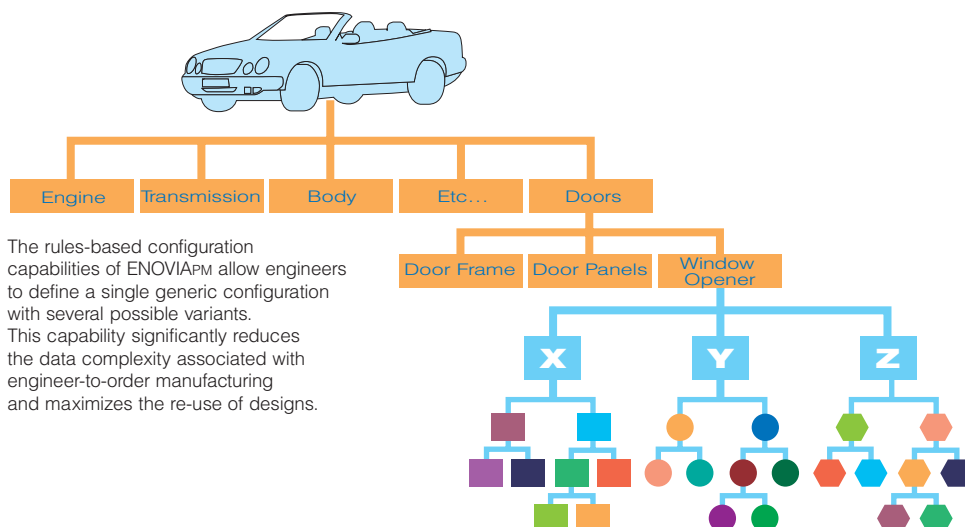
Engineers using ENOVIA PM can model a product generically, with specific configurations dependent upon rules. Using an automotive example, manufacturing can use ENOVIA PM to determine that including electric windows within the product configuration dictates the use of a more powerful alternator. This rules-based configuration capability provides a critical link between marketing-based product configurations and the manufacturing-specific configurations expected by ERP systems.

“Implementing a fully digital, process-oriented extended enterprise is a key goal of the Volvo Group business strategy. Achieving tighter integration of concurrent engineering and manufacturing processes is critical in helping us meet shorter production lead times while assuring quality and customer satisfaction. We believe the complementary technologies from the strategic partnership between IBM and Dassault Systemes will have a significant impact on the market, and particularly for the Volvo Group.”

Magnus Carlander

*Vice President of strategic technologies
Volvo Information Technologies*

Product structure using generic items





“PDM alone won’t deliver business benefits - you have to place it alongside a business change programme. We positioned PDM as a business tool rather than an engineering tool and that made a big difference in perception terms. We’re continuing to target further improvements and particularly recognise that an efficient product development process will deliver improvements across the whole business. IBM’s ENOVIA^{PM} is one of the key tools required to deliver this.”

*Peter Chivers
Chief Engineer
GKN Westland Aerospace*

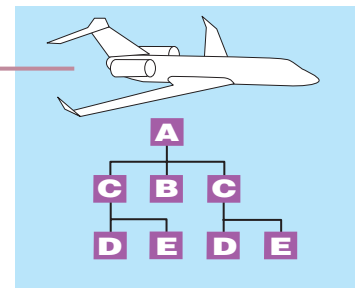
Serialized build tracking

ENOVIA^{PM}’s serialized build tracking provides the capability to track physical hardware parts and components for products as they are assembled, automatically identifying deviations from the as-designed product configuration. Developed in conjunction with a major aero engine manufacturer to track jet engine components, this serialized, or “as-built”, view of the product configuration is unique for each product instance, providing a packaged “electronic notebook” for each unit shipped. A “should-build” view of a product configuration may be generated from configuration data. Deviations between the “should-build” and the “as-built” configuration are automatically flagged, and can be resolved through a workflow based process. Additionally, serialized build tracking provides a foundation for “as-maintained” configurations, allowing manufacturers to track the transfer of components between products, as well as to formulate predictive maintenance schedules and customize “on-demand” maintenance manuals.

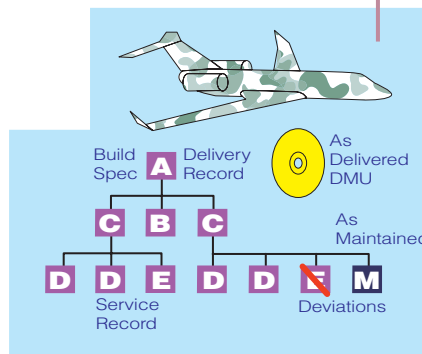
As Built instance management

Serialized build tracking allows manufacturers to keep a record of the configuration of every instance of product built. Comparison with “as-designed” configurations highlights design deviations. “As-maintained” configurations enable predictive maintenance.

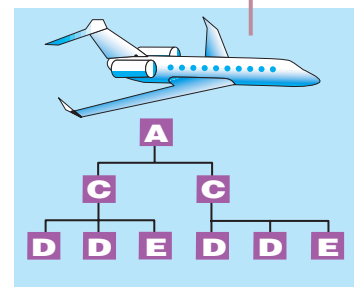
As planned



As built



As built



Product transfer and obsolescence

Within today's extended enterprises, the amount of information supporting design of a particular product can be astounding. Transferring or archiving this information when responsibility for the product is moved to a different design location, or when the product is discontinued, can be extremely difficult. ENOVIA^{PM} helps to consolidate and package product information so that moving or eliminating a product line is a breeze - not a tornado.

IBM — Supporting you every step of the way

IBM can help you benefit from ENOVIA^{PM}. IBM delivers a complete solution comprised of the strategies, tools and services to enable a standalone company to become an extended, virtual enterprise. When properly implemented and supported, IBM's ENOVIA^{PM} solution can integrate - for the first time - a better way to create products with a better way to manage their production.

IBM has worldwide sales, marketing, and services organizations dedicated to ensuring a successful implementation of ENOVIA^{PM} - at all levels of the extended enterprise. At the corporate level, IBM helps a company develop and achieve specific business targets. At an operational level, IBM develops and re-engineers specific processes so that they are linked across departments. At an infrastructure level, IBM helps implement the tools and technologies that support business processes.

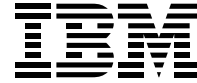
Utilizing best practices benchmarking and its unparalleled skills and experience, IBM has helped companies all over the world improve their competitiveness. Moreover, IBM has utilized its consulting methodologies and product technologies to improve competitiveness within its own worldwide manufacturing plants.

Performing successfully in today's competitive marketplace requires not only the best technologies, but also demands that these technologies be implemented to deliver the maximum benefit. The sales, marketing, services, and support capabilities of IBM - combined with the technical leadership and software development expertise of ENOVIA - deliver on this promise with ENOVIA^{PM}.



“ENOVIA has brought Black & Decker a standardization to product data management never before achieved. End users are able to access information on a worldwide basis from one application as opposed to unique systems previously maintained by each design center. Part and product data is transitioning from inaccessible file cabinets and PC's into ENOVIA, making this information more readily available and valued. Each new release of ENOVIA automates and simplifies the manipulation of engineering data and makes the use of ProductManager more user friendly.”

*Bill O'Connor
Vice President
Engineering Operations
Black & Decker NAPT*



FOR MORE INFORMATION...

To learn more about how ENOVIA PDM II Solutions can help your business call one of the numbers below, or contact your IBM marketing representative or IBM Business Partner. Or call 800 395-3339 (in North America only), or (972) 280-2968; Fax: (972) 280-3140; e-mail: cadcam@us.ibm.com

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